

volatile combustible materials (VCMs) in an amount in the range from about 13% to about 50% by weight.

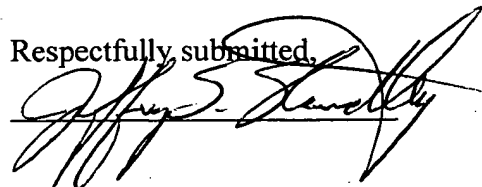
REMARKS

The above changes do not add new matter or change the substance of the application as it pertains to the claimed invention. The changes serve to correct informalities present in the claims as filed and to more clearly describe the invention.

Replacement sheets 173-175 and 182 are different from the originally filed sheets as follows: claims 15-19, 22, and 73 have been replaced by amended claims bearing the same numbers. In light of the amendments to the claims, the Applicant respectfully submits that claims 1, 2, 5-7, 10-87 are in condition for allowance. Therefore, the Applicant respectfully requests the Officer to indicate in the International Preliminary Examination Report that claims 1, 2, 5-7, and 10-87 are in condition for allowance.

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Respectfully submitted,



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7. A coke product made in accordance with a process according to claim 2.
10. A method for producing energy, said method comprising combusting a fuel, said fuel comprising coke, said coke comprising sponge coke in an amount in the range of about 40% to 100% by weight and having volatile combustible materials in an amount in the range from about 13% to about 50% by weight.
11. A method for producing energy according to claim 10 wherein said volatile combustible materials in said coke is in the range of from about 15% to about 30% by weight.
12. A method for producing energy according to claim 10 wherein said fuel comprises a mixture of said coke and coal, wherein the heat release rate ratio of said coke to said coal in said mixture is greater than about 1:4.
13. A method for producing energy according to claim 10 wherein said fuel consists essentially of coke comprising volatile combustible materials in amount in the range from about 13% to about 50% by weight.
14. A method for producing energy according to claim 10 wherein said fuel consists essentially of coke comprising volatile combustible materials in amount in the range from about 15% to about 30% by weight.
15. A method for removing undesirable flue gas components, said method comprising:

- (a) combusting coke comprising sponge coke in an amount in the range from about 40% to 100% by weight and having volatile combustible materials in an amount in the range from about 13% to about 50% by weight;
- (b) injecting conversion reagents into flue gas with sufficient mixing and sufficient residence time at sufficient temperature to convert undesirable flue gas components to collectible particulates upstream of a particulate control device (PCD); and
- (c) collecting said particulates in said particulate control device, said particulate control device including a PCD process selected from the group consisting of electrostatic precipitation (dry or wet), filtration, cyclones, and wet scrubbing.

16. A method for removing undesirable flue gas components according to claim 15, further comprising:

recycling unreacted flue gas conversion reagents to increase reagent utilization, wherein the rate of recycling exceeds 5% by weight of collected flyash.

17. A method for removing undesirable flue gas components according to claim 15, further comprising:

regenerating and reusing spent flue gas conversion reagents using a process selected from the group consisting of hydration, precipitation, and other unit operations;

wherein the rate of regeneration exceeds 70% by weight of collected flyash, and less than 30% of the collected flyash is disposed as a purge (or blowdown) stream, containing high concentration of impurities.

18. A method for removing undesirable flue gas components according to claim 17, further comprising:

using the purge stream from the regeneration process as a resource for valuable metals; and

extracting and purifying said valuable metals.

19. A process of producing coke, said process comprising the steps:
 - (a) Providing a coke precursor material derived from fossil carbonaceous origin; and
 - (b) Subjecting said coke precursor material to a thermal cracking process for sufficient time and at sufficient temperature and under sufficient pressure so as to promote the production of sponge coke and to produce a coke product having volatile combustible materials (VCMs) present in an amount in the range from about 13% to about 50% by weight;
wherein said coke is comprised of sponge coke in an amount in the range of about 40% to 100% by weight.
20. A process according to claim 19 wherein said coke precursor material is derived from crude oil, coal, or tar sands.
21. A process according to claim 19 wherein said VCMs are present in an amount in the range of from about 15% to about 30% by weight.
22. A process according to claim 19 wherein said coke has sufficient porosity and sufficient physical and chemical properties to provide low to medium grades of adsorption quality carbon.
23. A process according to claim 22 further comprising introducing at least one chemical compound into said thermal cracking process to improve the adsorption characteristics of said coke product.
24. A process according to claim 23 wherein said at least one chemical compound is selected from the group consisting of hydrogen, plastics, wood wastes, coals, and non-volatile hydrocarbons with appropriate cracking/coking characteristics.

other air toxics comprised of hydrocarbon or a metal compound.

71. A coke product according to claim 66 wherein the sulfur content of said coke product is adapted to enhance the adsorption of mercury and other metal compounds.
72. A coke product according to claim 66 wherein the sulfur content of said coke product is sufficiently reduced to enable said coke product to be used for steel or aluminum manufacture.
73. A method for producing energy, said method comprising combusting a fuel, said fuel comprising coke, said coke comprising sponge coke in an amount in the range from about 40% to 100% by weight and volatile combustible materials (VCMs) in an amount in the range from about 13% to about 50% by weight.
74. A method according to claim 73 wherein said VCMs are present in an amount in the range of from about 15% to about 30% by weight.
75. A method for producing energy according to claim 73 wherein said fuel comprises a mixture of said coke and at least one other fuel, and wherein the heat release ratio of said coke to said at least one other fuel in said mixture is greater than about 1:4.
76. A method according to claim 75 wherein said at least one other fuel is coal, fuel oil, natural gas, by-products, or wastes.
77. A process according to claim 2 wherein said sodium levels are reduced to less than about 5 ppm by weight.